WORK PLAN FOR EXPANSION OF THE SOIL VAPOR EXTRACTION SYSTEM TEXACO TUTU SERVICE STATION FORMER HYDRAULIC LIFT STATION #1 ESTATE ANNA'S RETREAT ST. THOMAS, USVI 00802

REPORT DATE:
SEPTEMBER 1999

PREPARED FOR:

USEPA REGION II
EMERGENCY & REMEDIAL RESPONSE DIVISION
290 BROADWAY
NEW YORK, NY 10007-1866

260174

TABLE OF CONTENTS

LIST OF APPENDICES

1.0 Background

The Texaco Tutu Service Station is located in the upper Turpentine Run basin in Estate Anna's Retreat in east-central St. Thomas, USVI. It is located at the intersection of Highways 38 and 384, southwest of the former Laga building, northeast of the Four Winds Shopping Center, and north of the Tillet Gardens Shopping Center. The general area has been part of a large scale investigation by US. EPA and V.I. DPNR of groundwater contamination originating from a number of facilities in the Upper Turpentine Run Area.

Since it was built in 1964, the service station has been in continuous operation. It is a retail outlet for gasoline and diesel fuel, and provides minor automotive mechanical servicing, such as oil changes and lubrication. Fuel has been stored at the site in underground storage tanks.

2.0 Chronology of Events

On Friday, May 14, 1999, a contractor doing the rehabilitation of the service station facility began removing a 20 ft. X 30 ft. section of a concrete slab to the west of the main building and in the area of the hydraulic lift. During the removal of the concrete slab, impacted soils were observed in the area of the lift piston, in the same general area that impacted soils had been identified in the 1992 soil borings. Construction work was stopped on Sunday, May 16th.

The contractor was instructed to remove impacted soils and work began on Thursday, May 20 after drums were shipped from Puerto Rico to St. Thomas. On May 24, Mr. Cain was notified that approx. 3 cubic yards of soils had been collected. The impacted soils appeared contained within the sandy backfill. All the soils had been placed in drums and labeled for sampling.

Texaco notified the U.S. EPA via telephone on Tuesday morning, May 25th. Written notice was also given to the parties of the Tutu litigation.

On Friday, May 28th, samples of the impacted soils within the excavation as well as what was contained within the drums were collected by EPA, DPNR and Texaco. After the sampling, the area was secured to prevent further access by unauthorized personnel and to prevent surface water and rain from entering the excavation.

On June 15, 1999, samples of hydraulic fluid from the lift reservoir and soil from the drums sampled on May 28th were collected for finger print analysis. The samples were forwarded to Envirodyne, Inc Laboratories for fingerprint analysis.

3.0 Previous Investigations:

We have reviewed the several past soil investigations of the Texaco Tutu Station conducted by GCL (1987), CDM (1988 and 1989), Lebron Associates (1990), Geraghty

& Miller (1992), BB&L (1993), ENSR (1993), ADL (1993), H+GCL (1993), and others. Several conclusions can be reached from these reviews:

- The oil/water separator and infiltration gallery have been thoroughly examined and found to not be LNAPL sources. We have included excerpts from H+GCL, Geraghty & Miller, and ADL that summarize the investigations of these units and the site as a whole. By our count, at least 75 soil samples have been taken from approximately 25 locations by not only Texaco and EPA contractors, but also parties with interests that are adverse to Texaco's. Both the old and new tank areas have been excavated to groundwater level. We have reviewed the field logs from these efforts as well as the Lebron Associates study (1990) (discussed below) and no evidence of any LNAPL or LNAPL source has been identified.

- Residual TPH in site soils, to the extent it has been found, is largely a remnant of former pipe and UST leaks and, other than in the immediate vicinity of the old gasoline tank pit, is insignificant—certainly not indicative of an LNAPL source. Areas shown on the attached H+GCL cross sections, which indicated areas of contaminated soil did not find any evidence of LNAPL or gross staining (refer to Figures 4, 8 and 11 from H+GCL, 1993 in Attachment III).

- A large clean interceptor excavation (the new tank excavation) exists between sources alleged by the VI Government consultants to be potential LNAPL sources and the apparent fault or lineament which they have in the past hypothesized could supposedly move such material to Four Winds. The excavation for the new product tank vault (in 1988) was 11.5' deep and covered an area of approximately 30' by 30'. Soil from the excavation was stored separately on the station property and tested for a variety of parameters, including TPH. TPH analyses showed no evidence of significant contamination. There is no record of any NAPL staining or seepage in the excavated soil or seepage of LNAPL into the excavated pit, even when the groundwater level rose into the bottom of the pit when it rained. Soil pile sampling results are discussed in the attached pages of the Lebron Associates report (refer to Attachment IV).

Based on the above information we believe that the impacted soils in the lift area are localized and not the result of any other source on the service station property.

4.0 Discussion of Current Analytical Data from the Lift Area:

Several samples have been collected at the lift area since the impacted soils were found These included samples by the Virgin Islands Department of Planning & Natural Resources (DPNR) and Texaco to assist with the nature of the impacts.

4.1 Analytical Fingerprinting Analysis:

As mentioned above, Texaco took samples from one of the drums containing the impacted soils (i.e., the drum containing the highest PID reading) and a sample of hydraulic fluid taken from the reservoir of the lift to determine if the impacts were from the lift.

The two samples taken for fingerprint analysis were analyzed using the FDEP FL-PRO Method. Results indicated that the impacted soil fingerprint matched the hydraulic fingerprint. Refer to attached analytical results.

4.2 DPNR Analytical Analysis:

Three soil samples were taken from the lift area (i.e., the bottom of the excavation) and two samples from drums that contained the excavated soil.

All samples were analyzed for VOCs, SVOCs, and TPH. Metals analysis was also conducted.

The analytical results from the DPNR analysis showed the presence of volatile and semi-volatile related to hydrocarbons which included naphthalene, 2-methylnaphthalene, phenanthrene, n-propylbenzene and bis (2-ethylhexyl) phthalate. The bis (2-ethylhexyl) phthalate is present in all of the samples. Components of gasoline, namely benzene, toluene, ethylbenzene, xylene (BTEX) were also present. Ethylbenzene was the most prevalent component. Toluene on the other hand, was detected in two of the five samples at very low concentrations. The bis (2-ethylhexyl) phthalate, a plasticiser emanating from the buried PVC piping in the lift area, is the marker chemical in all five of the samples.

In addition to the review of the DNPR's data, Texaco reviewed the analytical data from the two groundwater monitoring wells immediately downgradient of the impacted lift area, TT-1 and TT-4. The location of these wells is shown in the Site Layout included as Appendix A. The groundwater quality for these wells was reviewed to determine if they showed any impact from the soils in the area of the lift. In order to compare the soil chemical data to the groundwater data, the analytical suites for both media must be similar. The analytical results from these two monitoring wells did not show the same chemical cross-section as the soils. The groundwater monitoring wells showed a distinct BTEX signature, a pattern absent in the lift area soils. These data show that chemicals did not migrate from the lift area soils to the groundwater.

This provides further evidence to support our belief that the impacted soils are not impacting groundwater.

Our conclusion will be verified during the installation of a soil boring in the lift area. The purpose of the boring as mentioned below will be to determine the vertical extent of the impacts in the excavation.

5.0 Expansion of SVE System and Installation of Vapor Monitor Points

An expansion of the current SVE system within the area of the hydraulic lifts and abandoned oil/water separator is intended to address any residual VOC-impacted soils that may still be present within the existing remedial excavation. An illustration of the current Site Layout ,depicting the locations of the subject hydraulic lift and abandoned oil-water separator is included as Appendix A.

Current Operation of Soil Vapor Extraction System:

Based on the significant remedial progress that has been achieved from operation of the existing SVE system within the former underground storage tank (UST) area of the Texaco Station, it is intended that the SVE system be expanded to provide coverage over the hydraulic lift and abandoned oil/water separator area "Lift Area" of the property. It is intended that the current SVE blower and moisture separation system be utilized to provide additional vacuum coverage and vapor recovery over the Lift Area.

Prior Assessment of SVE System Performance:

At the request of Camp Dresser & McKee (CDM) in an October 13, 1998 telephone conversation with Fluor Daniel GTI (now IT Corporation), a performance evaluation of the SVE system was conducted to determine the dynamic vacuum radius of influence being achieved by the SVE system under normal operating conditions. A report of the SVE Performance Evaluation was submitted to CDM on October 30, 1998. The SVE system evaluation was performed prior to the completion of the modifications to the SVE system. Minor modifications to enhance the performance of the SVE system have since been performed that have significantly increased the vapor recovery rates.

The results of the pre-modification SVE system performance evaluation indicated that approximately 75 scfm of air was being extracted from three vapor extraction points and the minimum vacuum radius of influence (as defined by the 0.1 inches of water column vacuum terminus) achieved was 20 feet from each vapor extraction point. The results from the SVE system evaluation indicated that adequate coverage over the area of impaction was being achieved and that the SVE system was effectively removing significant quantities of hydrocarbon mass as intended.
Prior SVE System Modifications:

As mentioned above and documented in the July 1999 Monthly Operations and Maintenance Report, the motor sheave on the SVE system blower was replaced with a larger diameter sheave. Installation of the large diameter motor sheave resulted in an increase in the rotational speed of the SVE blower that is still within its allowable range for safe operation. The intention of this minor system modification was to enhance the cleanup efforts from within the existing SVE extraction wells and/or to have the flexibility to provide SVE treatment to other areas on the site if required.

System performance monitoring following the upgrades to the SVE motor have indicated that the applied vacuum at the SVE blower inlet was increased to as much as 10 inches of mercury and vapor extraction rates have doubled to approximately 150 scfm. It is expected that the additional extraction performance can be easily applied to the Lift Area to address any residual VOC impacted soils that still may be present.

Other minor system enhancements have also been performed prior to the upgrade to the SVE motor sheave. These enhancements include re-piping and installation of drop tubes within the SVE wells to facilitate dual phase extraction (DPE) and replacement of the original moisture separator transfer pump with a higher capacity multi-stage pump to increase the evacuation rate of recovered groundwater from the DPE system to the air stripping system. Details of these SVE system modifications have all resulted in increases in the overall remedial value and system flexibility and are documented in prior O&M and Remedial Action Progress Reports (RAPR).

Evaluation of Expanded SVE System Performance:

In order to evaluate the actual vacuum area of influence by the expanded horizontal SVE system within the Lift Area, five vapor monitoring points will be installed just outside of the existing excavation boundaries and one vapor monitoring point will be installed within the current excavation boundary.

During the installation of the soil boring for the intended vapor monitoring points, visual and field screening of soil samples collected at two-foot intervals to depth will be performed. The visual and field screening will be performed to determine the presence or absence of any VOC impacted soils outside of the existing excavation boundaries. If VOC impacted soils are encountered, those soil samples will be sent for laboratory analysis of VOCs by EPA Method 8260, Semi-VOCs by EPA Method 8270 and TPH by EPA Method 8015. If evidence of VOC impacted soils are discovered during the installation of the vapor monitor point soil borings, the intended placement of the soil borings will provide a good representation of the horizontal extent of any contamination that may exist proximal to the Lift Area. Vertical delineation of any VOC-impacted soils encountered will also be performed during installation of each monitoring point by visual inspection and field screening of soil samples at depth until sampler refusal is encountered.

The method for installation of the soil borings will be with either a split-spoon core sampler, a hydraulic push point (Geoprobe) method, or other equivalent method as appropriate. The soil borings will be installed to the groundwater table or until refusal is encountered.

Health & Safety Plan

All drilling and sampling activities will be conducted in accordance with Corp.'s retail Petroleum Health and Safety Plan. Prior to conducting any drilling or assessment activities, a job safety analysis will be performed to analyze any potential hazards

associated with installation of the proposed soil borings and the visual analysis of soil samples. Barricades and caution warnings will be set up to prevent interference from vehicular traffic.

During the installation of each soil boring, soil samples will be collected at two foot intervals for visual observation, field screening with an organic vapor analyzer and possible laboratory analysis.

5.1 Intended Location of Soil Borings for Vapor Monitor Points

Soil boring locations have been selected to provide a representative measure of the soil quality proximal to the existing hydraulic lift. An illustration of the Soil Boring Locations is included as Appendix B. In addition to the soil borings adjacent to the existing Lift Area excavation, soil boring SB-6 will also be installed within the approximate center of the Lift Area excavation to help provide vertical delineation of the any VOC impacted soils that may be encountered.

Due to the presence of the hydraulic lift and appurtenances within the excavation, the soil boring intended for the center of the excavation will be installed by the tripod and hammer method until sampler refusal is encountered.

Following installation of each soil boring, the soil bore holes will be completed as monitoring points for the Soil Vapor Extraction (SVE) System expansion within the Lift Area. Details regarding the completion of the soil borings into monitoring points are included in Section 1.3.

5.2 Visual Assessment of Soil Quality During Soil Boring Installation

Continuous soil samples will be collected with a split-spoon sampler at each soil boring location from the ground surface to the groundwater table or until sampler refusal is encountered. Each sample will be visually inspected for the presence of petroleum constituents and/or volatile organic compounds and to determine the localized lithology. All observations will be documented in a dedicated field book. In addition, all soil samples collected from each soil boring will be photo-documented for future reference.

All soil samples collected will be subjected in the field to an organic vapor analyzer equipped with either a photo or flame ionization detector. If visual observations or field screening indicates the presence of petroleum constituents and/or VOCs, the soil sample will be prepared for laboratory analysis of volatile and semi-volatile organics (EPA Methods 8260 and 8270) and total petroleum hydrocarbons (EPA Method 8015 or equivalent).

Quality Assurance Project Plan

Based on visual analysis of soil samples, if it is determined that used oil constituents may be present, all soil sampling will be performed in accordance with the Quality Assurance

Project Plan (QAPP) previously prepared for the Site. During any sampling activities, strict accordance with decontamination procedures outlined in the QAPP will be maintained.

Decontamination & Waste Disposal

The split spoon samplers and all sampling equipment will be pressure washed between each borehole in an on-site decontamination area. If petroleum-impacted soils are detected from the soil samples, the soils will be containerized and properly disposed of off-site at an approved disposal facility. If the soil boring 'cuttings' are determined to be free of contaminants, they will be used as backfill material in the existing excavation.

5.3 Completion of Vapor Monitoring Points for the Expanded SVE System

Following the installation of each soil boring, the total depth of the soil boring will be determined and completed as a monitoring point to be utilized for future monitoring of the Lift Area SVE system expansion. Each monitoring point will be constructed of one-inch diameter PVC well screen to depth, backfilled with 6/20 silica sand to approximately one foot below grade and finished with a Portland Cement grout. Each monitoring point will be installed within its own eight-inch steel manhole with a bolt down lid. Details of the Monitoring Points are included as Appendix C.

The monitoring points will provide several functions for the remediation of VOCs from the vadose zone of the Lift Area. Following the installation of the SVE system within the Lift Area the monitoring points will be utilized to collect site data including:

Static baseline vapor samples that can be measured for VOCs with field instruments or by a laboratory

Vacuum measurements that result from operation of horizontal SVE system to help determine the systems area of influence

Groundwater elevations if groundwater levels increase to levels within the range of the monitoring points. Groundwater fluctuations may be induced by seasonal precipitation, tidal influences, other nearby pumping sources, potential groundwater mounding from operation of the SVE system and other atmospheric influences.

A clean air source for the vadose zone if determined that an outside air source is necessary to optimize air flow through the impacted area.

Prior to startup of the SVE system within the Lift Area, static vapor readings will be collected from the monitoring points. During operation of the SVE system, vacuum readings will be collected to determine the area of influence of the system. Further details concerning the SVE System Startup will be submitted in a separate Startup Plan.

6.0 Installation of Horizontal Soil Vapor Extraction (SVE) Laterals

An SVE system will be installed within the Lift Area to remove any remaining residual contamination. The design of the SVE system is discussed in Section 2.1, below and includes a conservative layout of two horizontal SVE laterals within the Lift Area.

6.1 Construction of Horizontal SVE System & Surface Restoration

Two independently operated SVE laterals will be installed within the Lift Area at an approximate depth of four feet bls. Appendix D illustrates the Horizontal SVE System Layout intended for the Lift Area. Appendix E is a Zoom of the SVE Piping Layout.

Each SVE lateral will be constructed of 20 feet of 4-inch diameter Schedule 40 PVC with 0.020-inch continuous slots. Each SVE lateral will include two ten-foot sections of the 4-inch well screen, as specified above, coupled with a 4-inch diameter Tee. A two-foot riser will be installed from each Tee fitting and the piping reduced down to 3-inch diameter Schedule 40 PVC. Each 3-inch process line leading from each SVE lateral system will be piped underground into a common traffic rated 2-foot by 3-foot vault. Construction details for the SVE lateral is included as Appendix F.

Following the installation of the SVE piping, the Lift Area excavation will be backfilled with pea rock to approximately two feet bls. The pea rock will help facilitate vapor recovery from the entire Lift Area. The pea rock will then be covered with a double layer of 4-mil polyethylene liner to prevent short circuiting from the surface. The remainder of the excavation will then be backfilled and compacted in one-foot lifts to grade surface with crushed limerock or equivalent.

The Lift Area will then be resurfaced with wire-mesh reinforced concrete or equivalent to closely match existing surface conditions. A set of construction drawings with all pertinent details and sealed by licensed Professional Engineer will be submitted. The construction plans will include all engineering specifications for the work described herein.

6.2 Connection of Horizontal SVE system to existing SVE header

The common 2' x 3' vault will be located proximal to the existing SVE influent header as indicated on the figures included in Appendices D and E. The SVE process line leading from each SVE lateral will include a 3-inch diameter flow control ball valve. Within the vault, the two SVE process lines will be manifolded together and connected to the existing 4-inch diameter SVE header that leads to the intake of the SVE system's moisture separator.

6.3 Performance monitoring of Horizontal SVE system

Following the startup of the SVE system within the Lift Area, vacuum readings from the monitoring points will be collected for the first four hours of system operation to determine the steady state vacuum area of influence. Vacuum readings will also be measured from the monitoring points when each SVE lateral is operated independently from the other SVE lateral. This will help determine the vacuum area of influence contributed from each SVE lateral as compared to operation of both laterals simultaneously.

Extensive experience with the design, operation and maintenance of SVE systems has demonstrated that rotation of the applied vacuum to different SVE points helps to prevent the onset of preferential flow paths that may decrease the overall air to mass ratio resulting in decreased contaminant removal efficiency. The ability to regulate the applied vacuum over each SVE lateral with the flow control ball valve will provide some operational flexibility for the SVE system.

6.4 Operation & Maintenance of Horizontal SVE system

Operation and maintenance of the Lift Area SVE system will be performed in accordance with the existing USEPA approved Operation & Maintenance (O&M) plan for this site. As described in Section 2.3 above, adjustments to the flow control ball valves will be made as necessary to prevent the onset of preferential flow paths. The ball valves will be continuously adjusted on a weekly basis to prevent seizing and to enhance the hydrocarbon removal efficiency of the system.

6.5 Permitting and Record Construction Drawings

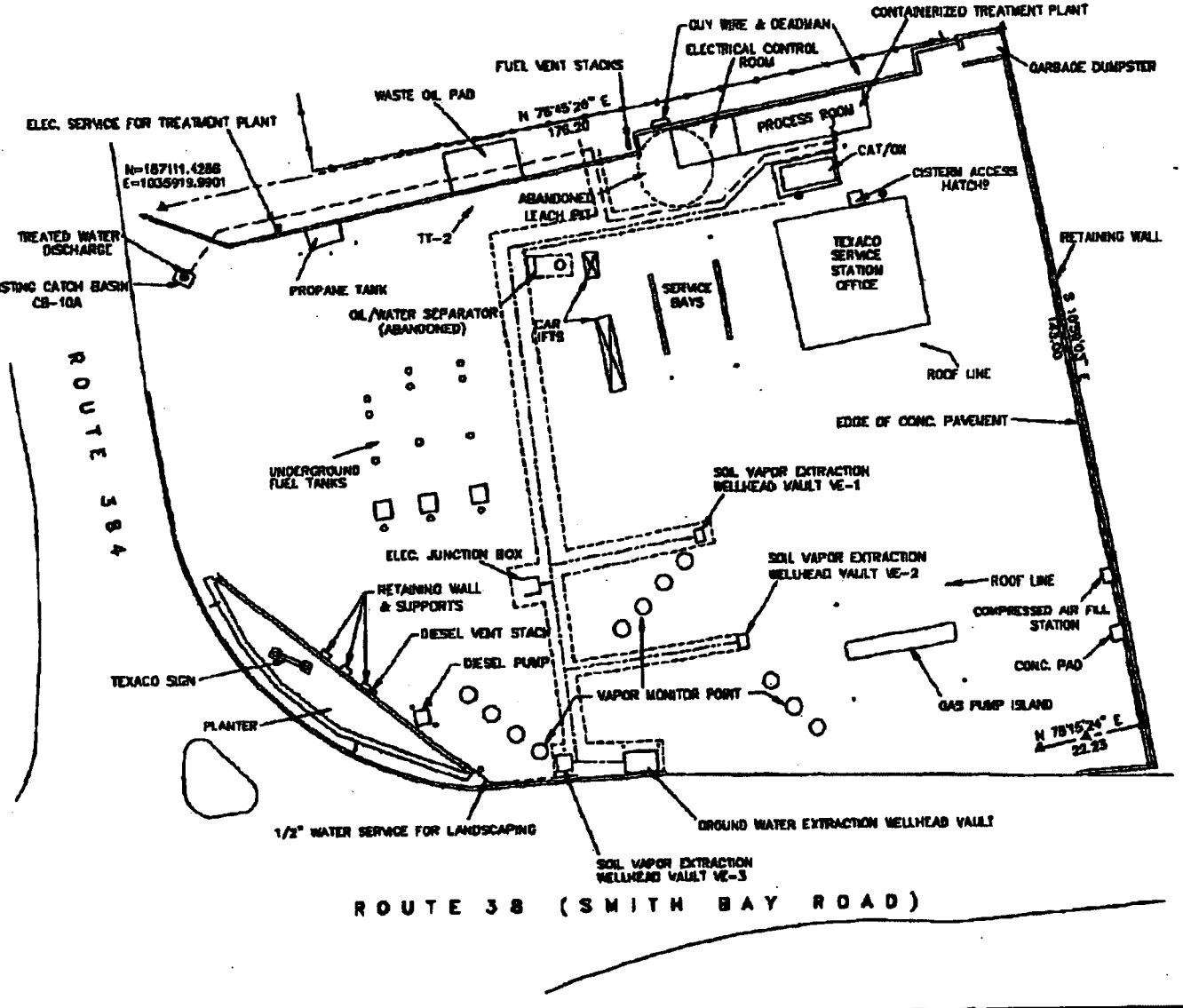
Prior to initiating any construction, any earthwork or other permits will be obtained from the Department of Planning & Natural Resources or other agencies as required. Following completion of the SVE system installation, Record Drawings will be prepared that detail the actual systems as they were installed, documenting any field changes to the original construction plans. The Record Drawings will be submitted to the DPNR and the USEPA within a reasonable time frame after completion of the installation.

7.0 Remedial System Expansion Completion Report

Following completion of the SVE system expansion and receipt of any soil laboratory analytical results that may be submitted a letter report will be submitted summarizing the completion of construction activities and some discussion regarding the soil sampling assessment. Copies of laboratory reports, chain of custody forms and any other pertinent information or documentation regarding the soil assessment will also be included in the report.

APPENDIX A

SITE LAYOUT



N

0 20 40

Scale: 1" = 20'

LEGEND

- TREATED WATER
- UNDERGROUND TRENCH
- CHAIN LINK FENCE
- DRAINAGE MANHOLE
- SANITARY SEWER
- UTILITY POLE
- UNMONUMENTED POINT
- VAPOR PROBE
- MONITORING WELL
- BOLLARD
- ELEC. ELECTRICAL
- SVE SOIL VAPOR EXTRACTION
- VP1.1 1ST VAPOR PROBE FROM VE-1

NOTES:

1. THIS FIGURE IS BASED ON AS-BUILT SURVEY (DRAWING "TEXTURLDWG") BY B.F. MCCOMB ENGINEERING, P.C., DATED 28 MAY 1997 AND IS REFERENCED TO ED DRAWING FOR TEXACO SERVICE STATION DSX 101 (N=186926.9247, E=1035863.2293).
2. VAPOR PROBE VP1.1 IS COVERED OVER WITH CONCRETE.
3. This AutoCad file was prepared and obtained from Erler & Kalinowski, Inc.

Floor Daniel GTI assumes no credit for the details prepared on this drawing. Its use is for informational purposes only.

IT CORPORATION
5253 NORTHWOOD RD
SUITE 1102
FT. LAUDERDALE, FL
(954) 485-1288
A Member of The IT Group

DRAWING DATE: 9/29/98	ACAD FILE: DETAIL.DWG

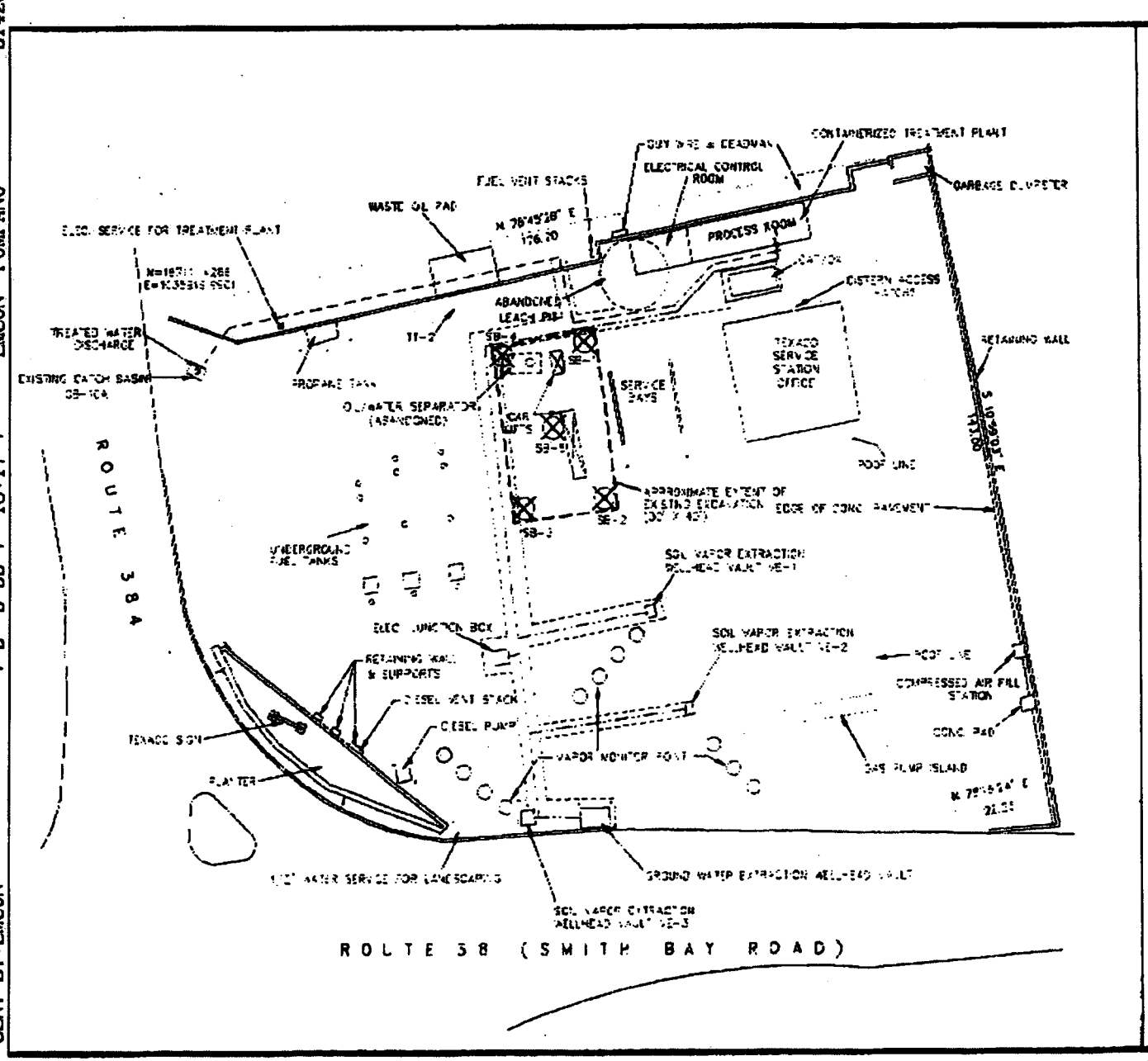
SITE LAYOUT

TEXACO INC. SUPPLEMENTAL USED OIL ASSESSMENT	PM: TMW
TEXACO TUTU SERVICE STATION ST. THOMAS, USVI	PE/RG:

DESIGNED:	DRAWN: TMW	PROJECT NO.: 100212	FIGURE:

APPENDIX B

SOIL BORING LOCATIONS

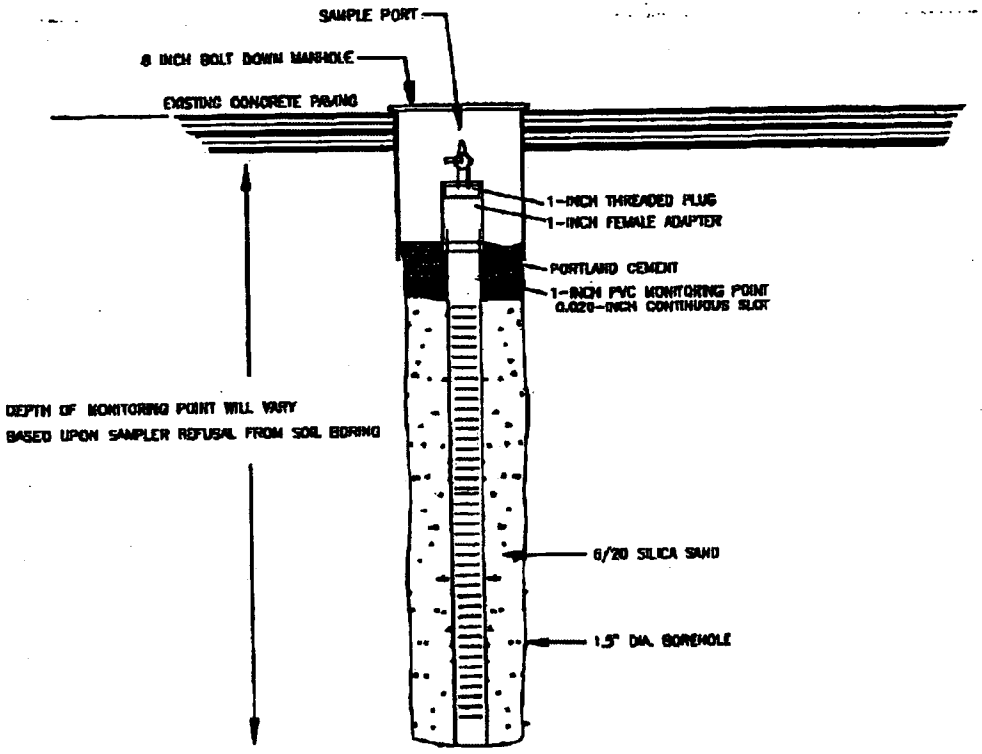


APPENDIX C

DETAIL OF MONITORING POINT

MONITORING POINT DETAIL

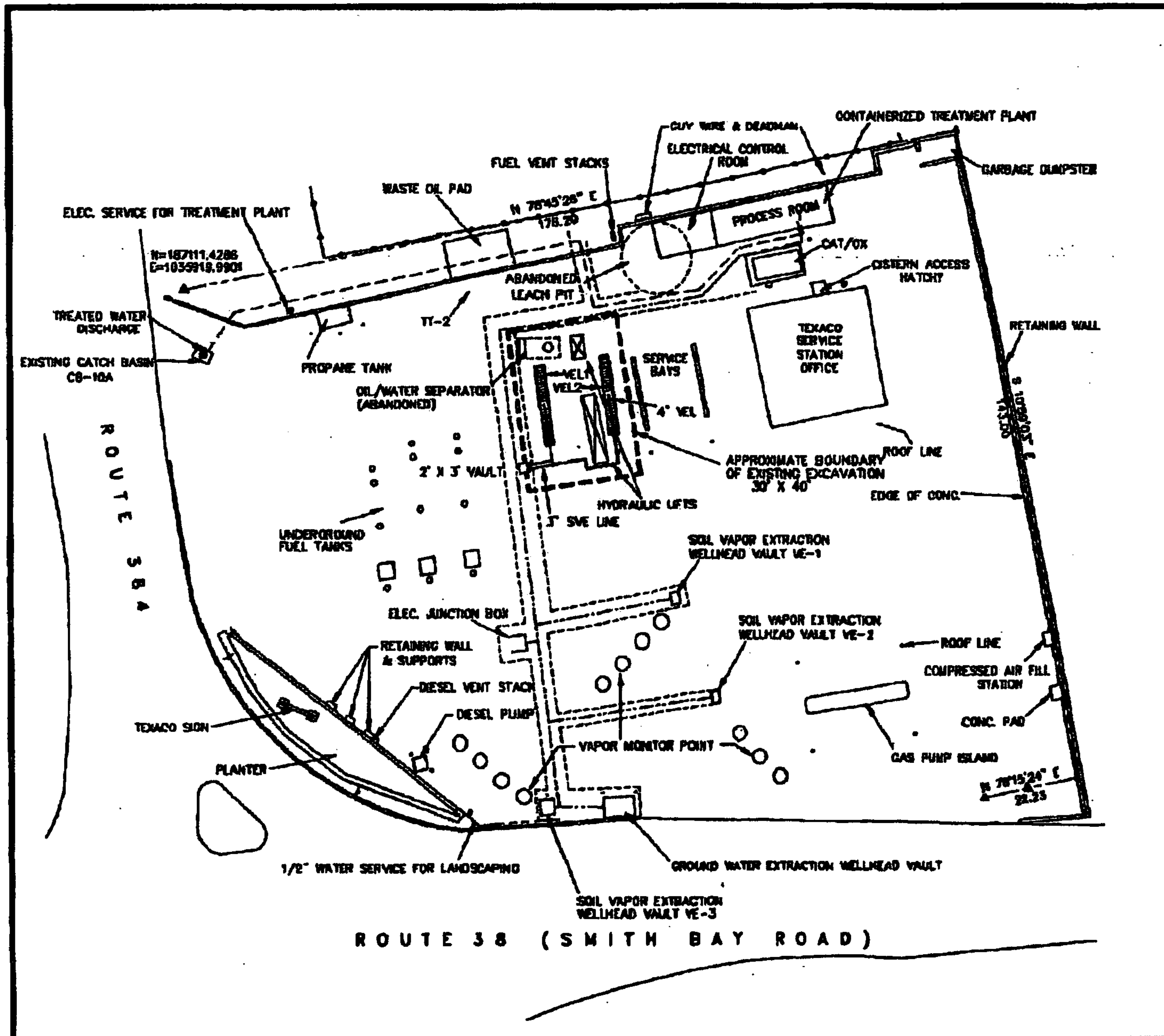
NOT TO SCALE



IT CORPORATION (A Member of the IT Group) 5853 RIVERWOOD RD SUITE #102 FT. LAUDERDALE, FL (954) 985-1908		
SCALE: NOTED	DRAWING DATE: 8/31/99	CAD FILE: MP-DWG
MONITORING POINT DETAILS		
CLIENT: TEXACO INC		PM: TMW
LOCATION: TEXACO TUT SERVICE STATION #1 ESTATE ANNA'S RETREAT ST. THOMAS, USVI		JOB: --
DETAILED BY: TMW	DRAFTED BY: TMW	PROJECT NO.: 100212

APPENDIX D

HORIZONTAL SVE SYSTEM LAYOUT



LEGEND

- TREATED WATER
- UNDERGROUND TRENCH
- CHAIN LINK FENCE
- DRAINAGE MANHOLE
- SANITARY SEWER
- UTILITY POLE
- UNMONUMENTED POINT
- VAPOR PROBE
- MONITORING WELL
- BOLLARD
- ELEC. ELECTRICAL
- SVE SOIL VAPOR EXTRACTION
- VP1.1 1ST VAPOR PROBE FROM VE-1

NOTES:

1. THIS FIGURE IS BASED ON AS-BUILT SURVEY (DRAWING "TEXTUTU.DWG") BY W.F. MCCOMB ENGINEERING, P.C. DATED 28 MAY 1997 AND IS REFERENCED TO TEXACO SERVICE STATION ...
2. VAPOR PROBE VP2.1 IS COVERED OVER WITH CONCRETE.
3. This AutoCad file was originally prepared by Eder & Kolksmoald, Inc.

IT Corp. only assumes credit for the edits associated with the Hydraulic Lift Assessment and modifications to the SVE system

IT CORPORATION
A Member of The IT Group
5353 ... RD SUITE #102 FT. LAUDERDALE, FL (954) 985-1000

DRAWING DATE: 8/20/99
ACAD FILE: LIFT_REM.DWG

HORIZONTAL SVE PIPING LAYOUT

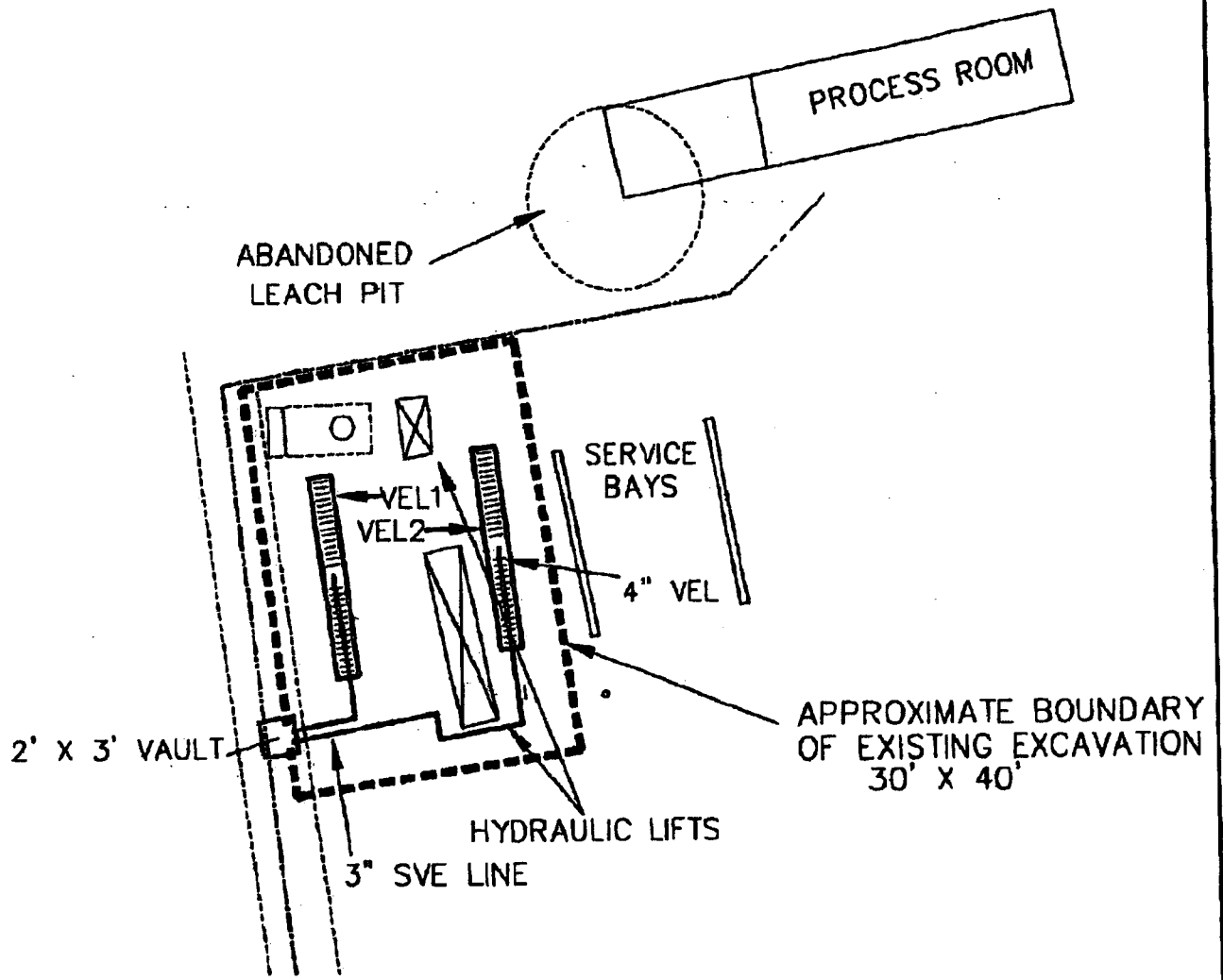
TEXACO INC. — PM: TMW

TEXACO TUTU SERVICE STATION
ST. THOMAS, USVI

DESIGNED: — DETAILED: TMW — PROJECT NO.: 100212 — FIGURE:

APPENDIX E

ZOOM OF SVE PIPING LAYOUT



N

LEGEND

- TREATED WATER
- UNDERGROUND TRENCH
- CHAIN LINK FENCE
- DRAINAGE MANHOLE
- SANITARY SEWER
- UTILITY POLE
- UNMONUMENTED POINT
- VAPOR PROBE
- MONITORING WELL
- BOLLARD
- ELEC. ELECTRICAL
- SVE SOIL VAPOR EXTRACTION
- VP1.1 1ST VAPOR PROBE FROM VE-1

NOTES:

1. THIS FIGURE IS BASED ON AS-BUILT SURVEY (DRAWING "TEXTUTU.DWG") BY M.F. NOONAN ENGINEERING, P.C. DATED 28 MAY 1997 AND IS REFERENCED TO TCI DRAWING FOR TEXACO SERVICE STATION DISK 101 (n=188828.9347, e=1035883.2783).
2. VAPOR PROBE VP2.1 IS COVERED OVER WITH CONCRETE.
3. This AutoCad file was originally prepared by Enter & Hollingsworth, Inc.

IT Corp. only assumes credit for the edits associated with the Hydraulic Lift Assessment and modifications to the SVE system

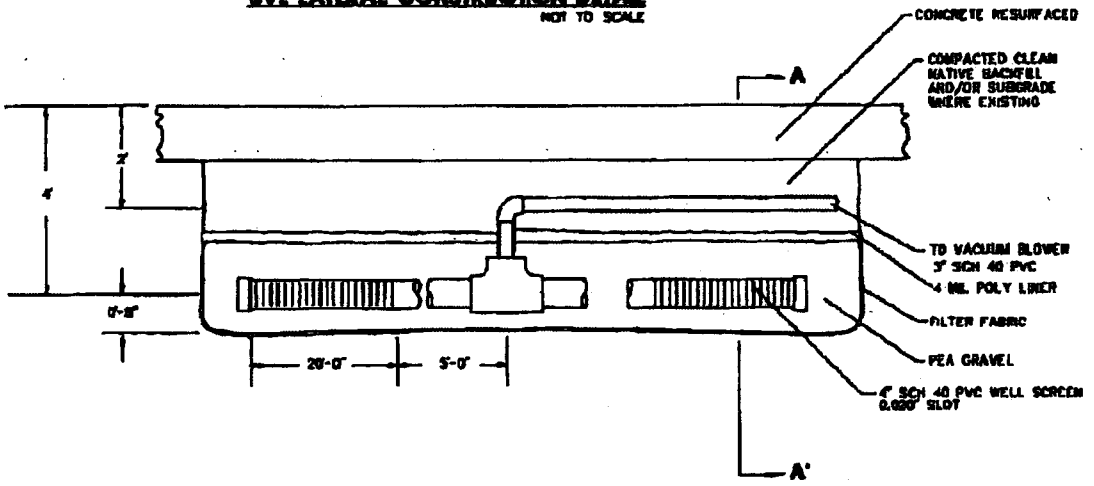
IT CORPORATION (A Member of The IT Group) 5553 BRAEWOOD RD SUITE 1169 FT. LAUDERDALE, FL (954) 583-1000	
DRAWING DATE: 8/28/99	ACAD FILE: PIPE-DET.DWG
ZOOM OF SVE PIPING LAYOUT	
TEXACO INC.	PM: TMW
TEXACO TUTU SERVICE STATION ST. THOMAS, USVI	DE/RE:
DESIGNED: / DETAILED: TMW / PROJECT NO.: 100212	FIGURE:

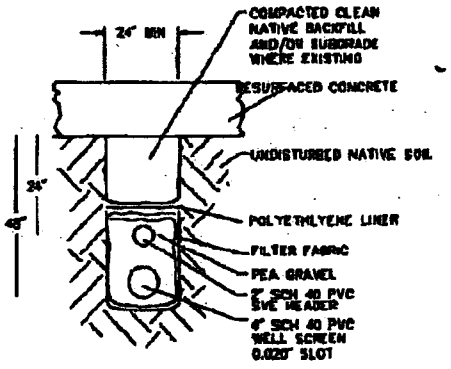
APPENDIX F

CONSTRUCTION DETAILS FOR SVE LATERAL

SVE LATERAL CONSTRUCTION DETAIL

NOT TO SCALE

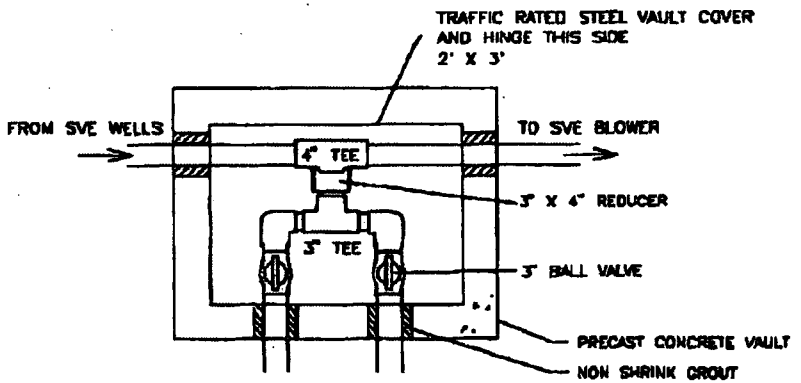




SECTION A-A'

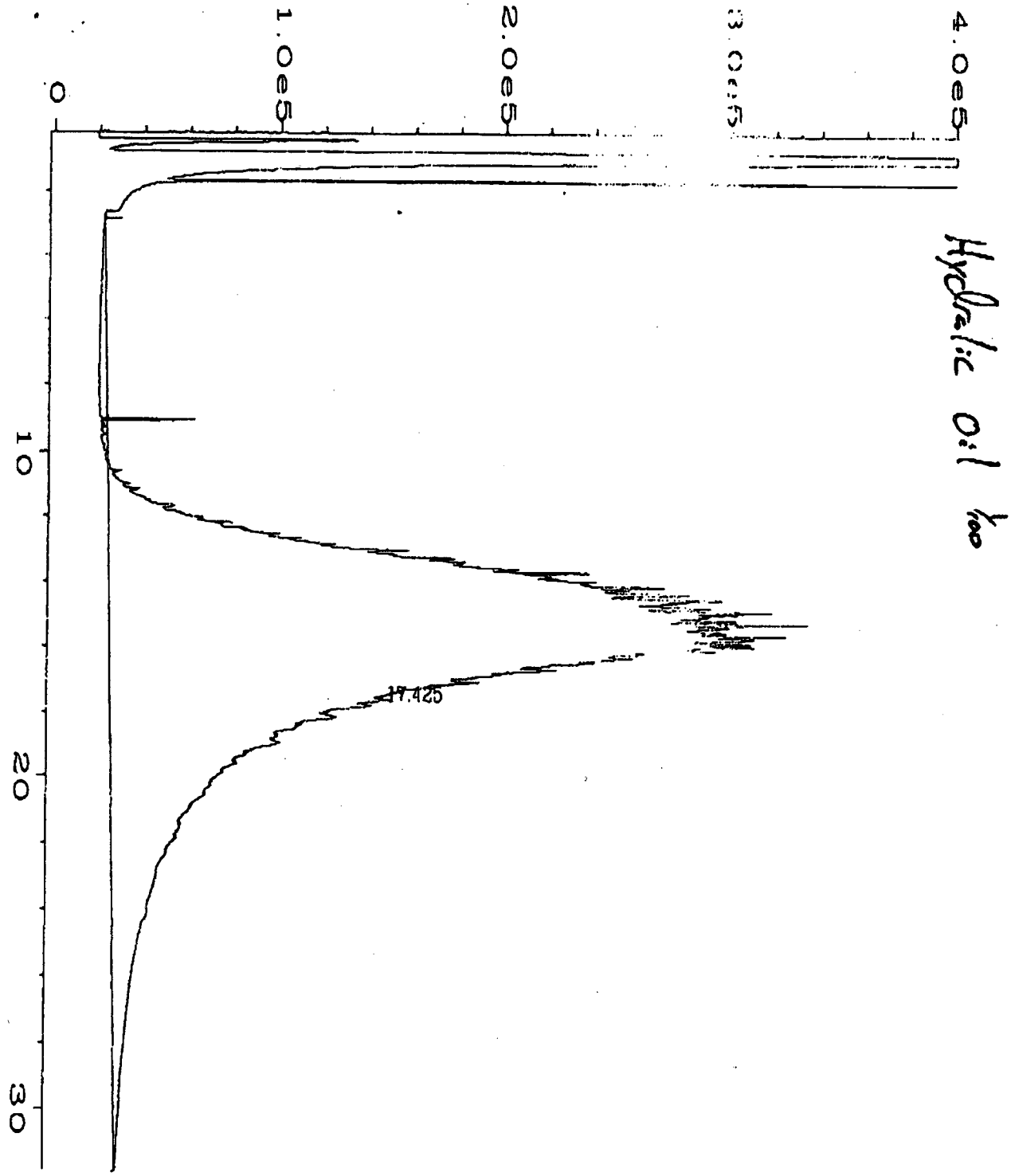
WELL VAULT DETAILS

NOT TO SCALE

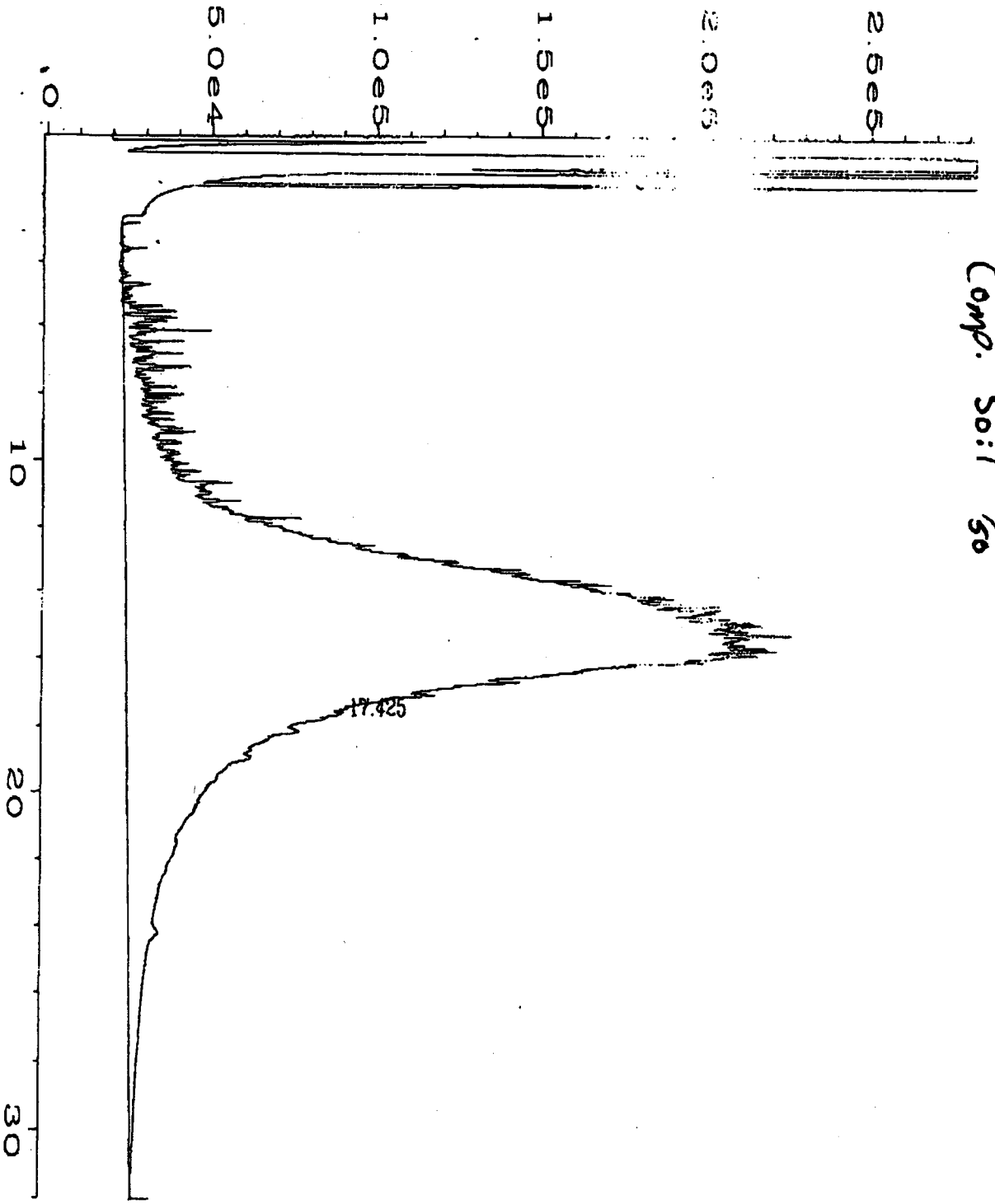


IT CORPORATION — 5553 RAMSWOOD RD SUITE 102, FT. LAUDERDALE, FL (954) 968-1008		
SCALE: NOTED	DRAWING DATE: 8/31/99	CAD FILE: SVE-DET.DWG
SVE LATERAL CONSTRUCTION DETAILS		
CLIENT: TEXACO INC.		PM: TMW
LOCATION: TEXACO TUTU SERVICE STATION #1 ESTATE ANNA'S RETREAT ST. THOMAS, USVI 00802		PE: --
DETAILED BY: TMW	DRAFTED BY: TMW	PROJECT NO.: 100212

FINGERPRINT ANALYSIS RESULTS



Data File Name	: C:\HPCHEM\1\DATA\062299\010F0101.D				
Operator	: MARK LIBURDI	GC4	Page Number	:	1
Instrument	: ANALYZER1		Vial Number	:	10
Sample Name	: 9906237-1 1/100		Injection Number	:	1
Run Time Bar Code:			Sequence Line	:	1
Acquired on	: 22 Jun 99 03:40 PM		Instrument Method	:	FLPR0610.MTH
Report Created on:	23 Jun 99 04:04 PM		Analysis Method	:	FLPR0610.MTH
Last Recalib on	: 19 APR 99 05:02 PM		Sample Amount	:	0
Multiplier	: 1		ISTD Amount	:	



Comp. Soil 1/50

Data File Name	: C:\HPCHEM\1\DATA\062399\008F0101.D				
Operator	: MARK LIBURDI	GC4	Page Number	: 1	
Instrument	: ANALYZER1		Vial Number	: 8	
Sample Name	: 9906237-2 1/50		Injection Number	: 1	
Run Time Bar Code:			Sequence Line	: 1	
Acquired on	: 23 Jun 99 02:55 PM		Instrument Method	: FLPR0610.MTH	
Report Created on	: 23 Jun 99 04:01 PM		Analysis Method	: FLPR0610.MTH	
Last Recalib on	: 19 APR 99 05:02 PM		Sample Amount	: 0	
Multiplier	: 1		ISTD Amount	:	

Envirodyne Inc.

4805 N.W. 2nd Avenue
Boca Raton, FL 33431
561-989-5225

IT Corporation
5553 Ravenswood Road Suite 102
Fort Lauderdale, FL 33312

July 3, 1999
Report: 9906237
Sample No: 9906237- 2

Attention: Tedde M. Waldman

Project: 100212 Texaco Tutu
Texaco Service Station St. Thomas, USVI

Collected by: Tedde Waldman

Collected on: 06/15/99
Received on: 06/18/99

SAMPLE ID: Composite Soils-70ppm

Date of Analysis: 06/23/99
Date of Extraction: 06/21/99

FL-PRO HYDROCARBON RANGE

PARAMETER	RESULT	DL	UNITS	ANALYST
Petroleum Range Organics	7300	500	mg/kg	ML
Hydrocarbon Range	C18-C36			ML

Analysis contained herein conform to EPA and DEP approved methods per Envirodyne Comprehensive Quality Assurance Plan No. 890041. Additional Laboratory Certification numbers: E86006, 84269, E83079, E86240, South Caroline 96022. All relevant quality assurance samples were within specified control limits unless otherwise stated.

Project Manager

Quality Assurance Director

Analysis Performed in Accordance with E.P.A. Methods
Laboratory Certification No. E86188
Laboratory Certification No. 86405

QA/QC Review

BDL=Below Detection Limit
DL=Detection Limit

Envirodyne Inc.

4805 N.W. 2nd Avenue
Boca Raton, FL 33431
561-989-5225

IT Corporation
5553 Ravenswood Road Suite 102
Fort Lauderdale, FL 33312

July 3, 1999
Report: 9906237
Sample No: 9906237- 1

Attention: Tedde M. Waldman

Project: 100212 Texaco Tutu
Texaco Service Station St. Thomas, USVI

Collected by: Tedde Waldman

Collected on: 06/15/99
Received on: 06/18/99

SAMPLE ID: Hydraulic Oil- Grab

Date of Analysis: 06/22/99
Date of Extraction: 06/21/99

FL-PRO HYDROCARBON RANGE

PARAMETER	RESULT	DL	UNITS	ANALYST
Petroleum Range Organics	100	1	%	ML
Hydrocarbon Range	C18-C36			ML

Analysis Performed in Accordance with E.P.A. Methods
Laboratory Certification No. E86188
Laboratory Certification No. 86405

QA/QC Review
BDL = Below Detection Limit
DL = Detection Limit

Envirodyne Inc.

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

4805 NW 2nd Avenue • Boca Raton, FL 33431
(561) 989-5225 • Fax (561) 989-5204

PROJECT NUMBER	PROJECT NAME	P.O. NUMBER	SAMPLE TYPE	PRESERVATIVE
100217	Texaco Tutu	116098		None

PROJECT LOCATION Texaco Tutu Service Station, St. Thomas USVI 00802

CLIENT NAME IT/GM

CLIENT ADDRESS 5553 Ravenswood Rd. #102, Ft. Lauderdale, FL 33312

PHONE 954-985-1008 **FAX** 954-985-0114

RUSH TAT (SURCHARGE) ☐ **DUE DATE:**

SAMPLE INFORMATION

ANALYSES REQUESTED

NUMBER	DATE	TIME	IDENTIFICATION	SOLID	LIQUID	AIR	NON-AQUEOUS LIQUID	Finger Print (FL-PRO)	Finger Print DRO							NO. OF CONTAINERS	REMARKS
1	6/15/99	15:00	Hydraulic Oil Grab Sample		✓		✓	✓								1	
2	6/15/99	15:10	Composite Soils - 70 ppm Hdr Drum	✓				✓								1	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

SAMPLE COLLECTED BY Ted Waldman

TOTAL OF ALL CONTAINERS 2

SEND REPORT TO (PERSON) Ted Waldman

SAMPLES CONDITION Intact

LOG NUMBER 9906237

	RELINQUISHED BY	DATE	TIME		RECEIVED BY	DATE	TIME
1	Tony Cooke	2/26/99	15:00	2			
3	[signature]	6/15/99	16:00	4	C. Apostolakos	6/18/99	15:00
5				6			